ballast tanks required under §157.10(b). Segregated ballast tanks that may be provided in addition to those required under §157.10(b) may be located anywhere within the vessel.

(ii) Double side and double bottom tanks used to meet the requirements of §157.10(b) must be located as uniformly as practicable along the cargo tank length. Large inboard extensions of individual double side and double bottom tanks, which result in a reduction of overall side or bottom protection, must be avoided.

(d) A vessel of less than 10,000 DWT that is constructed and certificated for service exclusively on inland or limited short protected coastwise routes must be fitted with double sides and a double bottom as follows:

(1) A minimum of 61 cm. (2 ft.) from the inboard side of the side shell plate, extending the full depth of the side or from the main deck to the top of the double bottom, measured at right angles to the side shell; and

(2) A minimum of 61 cm. (2 ft.) from the top of the bottom shell plating, along the full breadth of the vessel's bottom, measured at right angles to the bottom shell.

(3) For a vessel to which paragraph (a)(4) of this section applies, the width of the double sides and the depth of the double bottom may be 38 cm. (15 in.), in lieu of the dimensions specified in paragraphs (d)(1) and (d)(2) of this section, provided that the double side and double bottom tanks were fitted under a construction or conversion contract awarded prior to June 30, 1990.

(4) For a vessel built under a contract awarded after September 11, 1992, a minimum 46 cm. (18 in.) clearance for passage between framing must be maintained throughout the double sides and double bottom.

(e) Except as provided in paragraph (e)(3) of this section, a vessel must not carry any oil in any tank extending forward of:

(1) The collision bulkhead; or

(2) In the absence of a collision bulkhead, the transverse plane perpendicular to the centerline through a point located:

(i) The lesser of 10 meters (32.8 ft.) or 5 percent of the vessel length, but in no case less than 1 meter (39 in.), aft of the forward perpendicular;

(ii) On a vessel of less than 10,000 DWT tons that is constructed and certificated for service exclusively on inland or limited short protected coastwise routes, the lesser of 7.62 meters (25 ft.) or 5 percent of the vessel length, but in no case less than 61 cm. (2 ft.), aft of the headlog or stem at the freeboard deck; or

(iii) On each vessel which operates exclusively as a box or trail barge, 61 cm. (2 ft.) aft of the headlog.

(3) This paragraph does not apply to independent fuel oil tanks that must be located on or above the main deck within the areas described in paragraphs (e)(1) and (e)(2) of this section to serve adjacent deck equipment that cannot be located further aft. Such tanks must be as small and as far aft as is practicable.

(f) On each vessel, the cargo tank length must not extend aft to any point closer to the stern than the distance equal to the required width of the double side, as prescribed in §157.10d(c)(1) or §157.10d(d)(1).

[CGD 90–051, 57 FR 36239, Aug. 12, 1992, as amended by USCG–1999–6164, 65 FR 39262, June 23, 2000]

§157.11 Pumping, piping and discharge arrangements.

(a) Each tank vessel must have a fixed piping system for transferring oily mixtures from cargo tanks to slop tanks and for discharging oily mixtures to the sea and to reception facilities. On a vessel that has two or more independent piping arrangements, the arrangements collectively form the fixed piping system required by this paragraph.

(b) Each fixed piping system required by paragraph (a) of this section must have:

(1) At least two manifolds on the weather deck for transferring oily mixtures to reception facilities, one of which is on the port side of the vessel and one of which is on the starboard side; and

(2) Except as provided in paragraph (c) of this section, at least one discharge point that:

(i) Is used for discharges to the sea;

(ii) Is on a port or starboard weather deck or on the vessel's side above the waterline of its deepest ballast condition; and

(iii) Has an automatic stop valve that is actuated by a cargo monitor signal, except that manual valves may be provided on new vessels of less than 4,000 tons deadweight and on existing vessels.

(c) An above waterline discharge point is not required on an existing vessel if its fixed piping system meets Paragraphs 3 and 4 of Appendix E of this part.

(d) Each tank vessel under §157.09, §157.10a, or §157.10b that carries crude oil must have:

(1) Equipment that drains each cargo pump and oil piping line of oil residue;

(2) Oil piping lines for the draining of oil residue from cargo pumps and other oil piping lines to a cargo tank or a slop tank; and

(3) An oil piping line that meets paragraph (f) of this section and is connected to the cargo discharge piping on the outboard side of the manifold valves for the draining of oil residue from cargo pumps and other oil piping lines to a receptacle on the shore.

(e) Each tank vessel under §157.10 must have:

(1) Oil piping lines that are designed and installed to minimize oil retention in those lines;

(2) Equipment that drains each cargo pump and oil piping line of oil residue;

(3) Oil piping lines for the draining of oil residue from cargo pumps and other oil piping lines to a cargo tank or slop tank; and

(4) An oil piping line that meets paragraph (f) of this section and is connected to the cargo discharge piping on the outboard side of the manifold valves for the draining of oil residue from cargo pumps and other oil piping lines to a receptacle on the shore.

(f) Each oil piping line under paragraph (d)(3) or (e)(4) of this section must have a cross-sectional area of 10 percent or less of the cross-sectional area of the main cargo discharge piping line, except if the oil piping line under paragraph (d)(3) of this section is installed before January 1, 1980, that piping line may have a cross-sectional area of 25 percent or less of the cross-sectional area of the main cargo discharge piping line.

(g) Each tank vessel to which §157.10d applies that is built under a contract awarded after September 11, 1992 must be arranged so that:

(1) Except for short lengths of completely welded (or equivalent) piping,

(i) Ballast piping and other piping to ballast tanks, such as sounding and vent piping, do not pass through cargo tanks, and

(ii) Cargo piping and other piping to cargo tanks do not pass through ballast tanks;

(2) Suction wells in cargo tanks that protrude into the double bottom are as small as practicable and extend no closer to the bottom shell plating than $0.5h$, as specified in §157.10d(c)(2) or §157.10d(d)(2), as applicable; and

(3) On a vessel that is constructed and certificated for service exclusively on inland, Great Lakes, or limited short protected coastwise routes, any oil piping that is located within double hull spaces must be placed as far from the outer shell as is practicable and must be fitted with valves at the point of connection to the tank served, to prevent oil outflow in the event of damage to the piping. Such valves must be closed whenever the vessel is underway with any oil in tanks served by the associated piping, except as necessary during transfer operations.

NOTE: Piping location requirements for an oceangoing vessel are in §157.19(d). Related operating requirements are in §157.45.

[CGD 74–32, 40 FR 48283, Oct. 14, 1975, as amended by CGD 80–78, 45 FR 43704, June 30, 1980; CGD 77–058b, 45 FR 43708, June 30, 1980; CGD 79–152, 45 FR 82250, Dec. 15, 1980; CGD 76–088b, 48 FR 45720, Oct. 6, 1983; CGD 90–051, 57 FR 36244, Aug. 12, 1992; USCG–2000–7641, 66 FR 55573, Nov. 2, 2001]

§157.12 Cargo monitor and control system.

(a) Each vessel must have, for each type of cargo oil that it carries, at least one cargo monitor that is designed for use with that oil.

(b) Each monitor installed on a U.S. vessel must be approved under 46 CFR 162.050. Each monitor installed on a foreign vessel must be approved:

(1) Under 46 CFR 162.050; or